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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,152

03/17/2005

Youji Notoya

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02/06/2009

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EXAMINER

TORRENTE, RICHARD T

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

02/06/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,152	<b>Applicant(s)</b> NOTOYA ET AL.	
	<b>Examiner</b> RICHARD TORRENTE	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Image Encoding Method of Restricting Random Access Reference Order.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim(s) 1-9 is/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 recites the limitation "the first access unit" in line 25. There is insufficient antecedent basis for this limitation in the claim.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim(s) 1-15 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, the "first reference restriction step" and "second reference restriction step" method is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The applicant has provided no explicit and deliberate definitions of the "first

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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reference restriction step" and "second reference restriction step" to limit the steps to the electronic form of the "coding a plurality of pictures".

7. The USPTO interim guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material". In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5<sup>th</sup> ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim(s) 16 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 16 defines a program embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory on most cases since use of technology permits the function of the descriptive material to be realized" - Guidelines Annex IV). That is, the scope of the presently claimed a

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program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1, 10 and 16-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art (AAPA).

Regarding claim 1, AAPA discloses a picture coding method (see 900 in fig. 1) of coding a plurality of pictures (see 911 in fig. 1) included in a picture signal for generating a coded picture signal (see fig. 2) in the following manner: coding each of predetermined pictures as an entry picture (see second "I" in "Str display order" in fig. 2) without reference to another picture; and coding each of the pictures other than the entry pictures with reference to another coded picture (e.g. see Rr1 in fig. 2), wherein the picture signal is processed per access unit (e.g. see RA0 in fig. 2) which is made up of a plurality of pictures including the entry picture (see "I", "B" and "P" in "RA0" in fig. 2), and the method comprises: a first reference restriction step of restricting, in a target

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access unit (see RAU0-RAU1 in fig. 2) to be processed, so that a post-entry picture located after the entry picture in display order (e.g. see fourth "B" after "I" in "Str display order" in fig. 2) refers to another picture (e.g. see third "B" in "Str display order" in fig. 2) except for the following pictures: a picture located before the entry picture in coding order (see first "B" in "Str coding order" in fig. 2); and a pre-entry picture which is located before the entry picture in display order and refers to a picture located before the entry picture in coding order (see second "B" in "Str coding order" in fig. 2); and a second reference restriction step of restricting, in an access unit immediately following the target access unit (see RAU2 in fig. 2), so that a pre-entry picture located before the entry picture in display order (e.g. see third "B" before "I" in "Str display order" in fig. 2) refers to another picture except for the following pictures: a picture located before the entry picture in the target access unit in coding order (see first "B" in "Str coding order" in fig. 2); and a pre-entry picture in the target access unit, which refers to a picture located before the entry picture in the first access unit in coding order (see second "B" in "Str coding order" in fig. 2).

Regarding claims 10, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

Regarding claims 16, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

Regarding claims 17, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

Regarding claims 18, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-9, 11-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA).

Regarding claims 2 and 19, AAPA does not disclose wherein in the first reference restriction step, another picture is used for reference except for the following pictures: a picture located before the entry picture in coding order; and a pre-entry picture located before the entry picture in display order, and in the second reference restriction step, another picture is used for reference except for the following pictures: a picture located before the entry picture in the target access unit in coding order; and a pre-entry picture in the target access unit.



However, AAPA discloses the display or coding order continues prior to RAU0 of fig. 2.

Given the teaching, it would have been obvious to one of ordinary skill in the art to include another unit such as RAU(0-1) containing the same sequence of "B I B P" in the target unit of fig. 2, wherein in the first reference restriction step, another picture is used for reference (e.g. see first "P" in "Str display order" in fig. 2) except for the following pictures: a picture located before the entry picture in coding order (e.g. first "B" in "Str coding order" in RAU(0-1) prior to "RAU0" in fig. 2); and a pre-entry picture located before the entry picture in display order (e.g. second "B" in "Str display order" in RAU(0-1) prior to "RAU0" in fig. 2), and in the second reference restriction step, another picture is used for reference except for the following pictures: a picture located before the entry picture in the target access unit in coding order (e.g. first "B" in "Str coding order" in RAU(0-1) prior to "RAU0" in fig. 2); and a pre-entry picture in the target access unit (e.g. second "B" in "Str display order" in RAU(0-1) prior to "RAU0" in fig. 2) for the benefit of having a wider reference selection to improve compression.

Regarding claim 3, AAPA further discloses comprising a selection step of selecting the target access unit (see "RAUs" in fig. 2).

Regarding claims 4 and 11, AAPA further discloses comprising: a reference structure information coding step of coding reference structure information indicating an access unit processed as a target access unit for which the first and second reference

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restriction steps have been executed (see Rr1-Rr4 in fig. 2); and an insertion step of inserting the coded reference structure information into the coded picture signal (see 909 in fig. 1).

Regarding claims 5 and 12, AAPA further discloses comprising: a reference structure information coding step of coding (see 900 in fig. 1), per access unit, each reference structure information indicating whether or not the first and second reference restriction steps have been executed for each access unit processed as a target access unit (see Rr1-Rr4 in fig. 2); and an insertion step of inserting each reference structure information corresponding to each access unit into said each access unit included in the coded picture signal (see Rr1-Rr4 in fig. 2).

Regarding claims 6 and 13, AAPA further discloses comprising: a reference structure information generation step of generating each reference structure information indicating whether or not the first and second reference restriction steps have been executed for each access unit processed as a target access unit (see Rr1-Rr4 in fig. 2); and a reference structure information output step of outputting the reference structure information generated in the reference structure information generation step, by attaching the generated information to the coded picture signal (see "Str coding order" in fig. 2).

Regarding claim 7, AAPA further discloses comprising a coding/insertion step of coding each identification information for identifying each reference structure information corresponding to each access unit (see "I", "B" and "P" in fig. 2), and inserting said identification information into said each access unit included in the coded picture signal (see "Str coding order" in fig. 2).

Regarding claims 8 and 14, AAPA further discloses comprising: a reference structure information coding step of coding, per access unit, each reference structure information indicating a range of reference for each picture included in each access unit (see range RAUs in fig. 2); and an insertion step of inserting each reference structure information corresponding to each access unit into said each access unit included in the coded picture signal (see Rr1-Rr4 in fig. 2).

Regarding claims 9 and 15, AAPA further discloses comprising: a reference structure coding step of coding, per access unit, each reference structure information indicating a range of reference for each post-entry picture included in each access unit (see "I", "B" and "P" in RAU0 and RAU1 in fig. 2), and a range of reference for each pre-entry picture included in an access unit immediately following said each access unit (see "I", "B" and "P" in RAU1 and RAU2 in fig. 2); and an insertion step of inserting said reference structure information corresponding to each access unit into said each access unit included in the coded picture signal (see Rr1-Rr4 in fig. 2).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD TORRENTE whose telephone number is (571) 270-3702. The examiner can normally be reached on M-F: 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Young Lee/  
Primary Examiner, Art Unit 2621

RT  
/Richard Torrente/  
Examiner, Art Unit 2621